

REMARKS

Claims 156-183 were pending in the subject application. By this Amendment, applicants have amended claim 156 and canceled claim 159 without disclaimer or prejudice to applicants' right to pursue this subject matter in the future. Accordingly, upon entry of this Amendment, claims 156 to 158 and 160 to 183, as amended, will be pending and under examination. .

Applicants maintain that the amendments to claim 156 do not raise any issue of new matter. Support for the amendments to claim 156 may be found inter alia in the specification, as originally-filed, on page 29, lines 1-5; page 36, lines 20-34; page 78, line 6 through page 79, line 30.

Accordingly, applicants respectively request that this Amendment be entered.

A. Rejection under 35 U.S.C. §112, first paragraph

1. On page 2 of the August 12, 2003 Final Office Action the Examiner rejected claim 159 under 35 U.S.C. §112, first paragraph, as allegedly containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention, for the reasons of record set forth in Paper 8, 2/8/2002 and Paper No. 10, 11/19/2002.

In response, applicants without conceding the correctness of this ground of rejection have canceled claim 159 without disclaimer or prejudice.

Accordingly, the rejection of claim 159 has been rendered moot and applicants respectfully request that the Examiner reconsider and withdraw this ground of rejection.

2. On page 4 of the August 12, 2003 Final Office Action the Examiner rejected claims 156-183 under 35 U.S.C. §112, first paragraph, as allegedly containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention, for the reasons of record set forth in Paper No. 8, 2/8/2002 and Paper No. 10, 11/19/2002.

The Examiner alleged that these are genus claims. The Examiner alleged that according to the specification, the term variant means a protein having one or more amino acid substitutions, deletions, insertions and/or additions made to SEQ ID NO: 1. The Examiner then alleged that the specification and claims do not indicate what distinguishing attributes are shared by the members of the genus. The Examiner then alleged that the specification and claims do not place any limit on the number of amino acid substitutions, deletions, insertions and/or additions that may be made to SEQ ID NO: 1. The Examiner concluded that the scope of the claim includes numerous structural variants, and the genus is highly variant

because a significant number of structural differences between genus members is permitted.

First applicants note that claim 156 has been amended to recite specific invertebrate Gαq proteins and specific mammalian G proteins.

Applicants maintain that the specification provides written description for the invention as now claimed. That is, the specification conveys with reasonable clarity that applicants were in possession of an isolated nucleic acid encoding a chimeric G protein, as now claimed. One skilled in the art, based on the disclosure, would readily recognize that the disclosure provides a representative number of species and describes the now claimed invention with all of its limitations.

MPEP §2163.05 recites:

The written description requirement for a claimed genus may be satisfied through sufficient description of a representative number of species. A "representative number of species" means that the species which are adequately described are representative of the entire genus. Thus, when there is substantial variation within the genus, one must describe a sufficient variety of species to reflect the variation within the genus. On the other hand, there may be situations where one species adequately supports a genus. Occasionally, a functional recitation of those known compounds in the specification may be sufficient as that description.

The specification teaches one to delete a number of contiguous

amino acids from the C-terminal end of the invertebrate Gαq G protein and replace the number of amino acids deleted with exactly the same number of amino acids from the C-terminal end of a vertebrate G protein. The specification distinctly describes that the number of amino acids deleted can be from 5 to 21 contiguous amino acids, and that the number deleted must equal the number replaced.

First applicants point out that the specification identifies the sequences of many invertebrate G proteins on page 67, lines 5-25, in Table 8, and in Figures 5A-5C. The specification provides examples of vertebrate G proteins in Figure 1. Applicants maintain that many invertebrate and vertebrate G protein coding sequences were available through public gene databases at the time the application was filed.

The specification teaches the methods to construct chimeric G proteins, as well as specific examples of primers used to construct chimeric G proteins at page 68, lines 9-23 and Tables 1-3. Based on these teachings, one skilled in the art could construct primers derived from any of the disclosed invertebrate G protein sequences.

Applicants maintain that the specification describes a sufficient variety of species. Applicants maintain that more than the described varieties of species would be redundant, and the specification clearly points out methods to make the now claimed invention.

Furthermore, applicants direct the Examiner's attention to amended

claim 156. Applicants maintain that the claim language and supporting specification language clearly demonstrate applicants' possession of the invention. That is, the claims and supporting specification language clearly identify that the chimeric G protein, upon activation, produces a Gαq second messenger response which comprises release of inositol phosphate, release of intracellular calcium or calcium mobilization. Applicants maintain that now recited element of the invention is well described. See, for example, Tables 4, 5, 6 and 7.

Applicants maintain that by following the teachings, given the information available in the public domain, a person of ordinary skill in the art can readily understand the invention now claimed and readily make many combinations of chimeric G proteins.

In light of the amendments and remarks set forth above, applicants maintain that claims 156-158 and 160-183, as amended, meet the requirements under 35 U.S.C. §112, first paragraph. Accordingly, applicants respectfully request that the Examiner reconsider and withdraw this ground of rejection.

B. Rejection under 35 U.S.C. §112, second paragraph

On page 8 of the August 12, 2003 Final Office Action the Examiner rejected claims 156-176 and 179-183 under 35 U.S.C. §112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Examiner alleged that claim 156 is vague and indefinite in the

recitation of "produces a $G_{\alpha q}$ second messenger response". The Examiner pointed out that the specification on page 29, lines 1-4 defines a " $G_{\alpha q}$ second messenger response" as one of a number of responses which are typically produced by activation of G protein heterotrimers containing $G_{\alpha q}$. The Examiner then noted that G proteins upon activation bind to effectors, which produce the second messenger response. The Examiner alleged that it is not clear from the claim whether the chimeric $G_{\alpha q}$ protein is to bind to an effector and induce a second messenger response, or whether the chimeric $G_{\alpha q}$ protein is to produce a second messenger response itself in some manner. The Examiner then stated that claims 157-176 and 179-183 are rejected insofar as they depend on the recitation of claim 156 "produces a $G_{\alpha q}$ second messenger response".

In an attempt to advance the prosecution of the subject application, but without conceding either the correctness of the Examiner's position, applicants have amended claim 156 to recite the type of second member response employed, thereby rendering this ground of rejection moot.

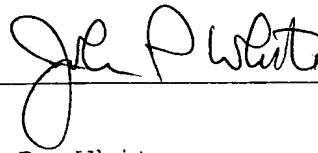
Accordingly, Applicants respectfully request that this ground of rejection be reconsidered and withdrawn.

If a telephone interview would be of assistance in advancing prosecution of the subject application, applicants' undersigned attorney invites the Examiner to telephone him at the number provided below.

Kenneth A. Jones, et al.
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Page 14

No fee, other than the enclosed fee of \$950.00 for a three month extension of time, is deemed necessary in connection with the filing of this Amendment. However, if an additional fee is required, authorization is hereby given to charge the amount of any such fee to Deposit Account No. 03-3125.

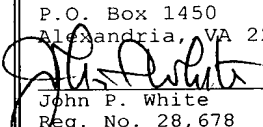
Respectfully submitted,



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